APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,053	01/15/2004	Richard Reynolds	830_011	5101

25191	7590	12/19/2005

BURR & BROWN
PO BOX 7068
SYRACUSE, NY 13261-7068

EXAMINER
WEST, JEFFREY R

ART UNIT	PAPER NUMBER
2857	

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/758,053	REYNOLDS ET AL.
	Examiner	Art Unit	
	Jeffrey R. West	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *15 July 2005*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-9* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-9* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *15 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01/15/04*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the

obligation under 37 CFR 1.56 to point out the inventor and invention dates of each

claim that was not commonly owned at the time a later invention was made in order

for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35

U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Drawings

2. The drawing in Figure 2 is objected to because it does not have sufficiently

descriptive labels. Blank boxes in drawings should be labeled descriptively unless it

is a well-known component. Specifically, blank boxes "46" should be labeled

"Routers".

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they include the following reference character(s) not mentioned in the

description: "90" (Figure 5a).

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to

the specification to add the reference character(s) in the description in compliance

with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment

of the application. Any amended replacement drawing sheet should include all of the

figures appearing on the immediate prior version of the sheet, even if only one figure

is being amended. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective

action in the next Office action. The objection to the drawings will not be held in

abeyance.

Claim Objections

5. Claims 1-3 and 9 are objected to because of the following informalities:

In claim 1, line 10, to avoid problems of antecedent basis, "said packet" should

be ---said intercepted packet---.

In claim 1, lines 11-12, to avoid problems of antecedent basis, "sequence of

packets" should be ---sequence of intercepted packets---.

In claim 1, line 15, "characterised in that the" should be ---wherein the---.

In claim 1, line 19, to avoid problems of antecedent basis, "the difference" should

be ---a difference---.

In claim 1, line 22, to avoid problems of antecedent basis, "the difference" should

be ---a difference---.

In claim 1, line 24, to avoid problems of antecedent basis, "said preceding packet" should be ---said preceding stored packet---.

In claim 1, lines 26-27, to avoid problems of antecedent basis, "the polarity" should be ---a polarity---.

In claim 1, line 28, to avoid problems of antecedent basis, "the polarity" should be ---a polarity---.

In claim 2, lines 3-4, to avoid problems of antecedent basis, "said consecutive jitter parameter for a sequence of stored packets" should be ---said consecutive positive jitter parameter for said sequence of stored packets ---.

In claim 3, lines 3-4, to avoid problems of antecedent basis, "said consecutive jitter parameter for a sequence of stored packets" should be ---said consecutive positive jitter parameter for said sequence of stored packets ---.

In claim 9, line 10, to avoid problems of antecedent basis, "said packet" should be ---said intercepted packet---.

In claim 9, line 12, to avoid problems of antecedent basis, "sequence of packets" should be ---sequence of intercepted packets---.

In claim 9, line 15, "characterised in that the" should be ---wherein the---.

In claim 9, line 18, to avoid problems of antecedent basis, "the difference" should be ---a difference---.

In claim 9, line 21, to avoid problems of antecedent basis, "the difference" should be ---a difference---.

In claim 9, line 23, to avoid problems of antecedent basis, "said preceding

packet" should be ---said preceding stored packet---.

In claim 9, line 26, to avoid problems of antecedent basis, "the polarity" should be

---a polarity---.

In claim 9, line 27, to avoid problems of antecedent basis, "the polarity" should be

---a polarity---.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

7. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

Claim 1 is considered to be vague and indefinite because in claim 1, lines 17-18,

reference is made to a step of "generating a jitter parameter for each of a sequence

of stored packets". Claim 1, however, already includes "storing a sequence of

intercepted packets associated with a call...extracting a set of parameters from said

sequence of packets". Therefore, it is unclear to one having ordinary skill in the art

as to whether the step of "generating a jitter parameter for each of a sequence of

stored packets" refers to the previously presented "sequence of intercepted packets

associated with a call" or a different sequence of stored packets. Also, since the

previous limitation of "storing a sequence of intercepted packets associated with a call" only stores one sequence of packets, it unclear whether the step of "generating a jitter parameter for each of a sequence of stored packets" is generating a jitter parameter for each of a sequence of stored packets, as claimed, or generating a jitter parameter for each packet of a sequence of stored packets.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, because it attempts to further limit claim 2 to determine an average for "a sequence of said maximum values", while parent claim 2 only determines "a maximum value" for "a sequence of stored packets". Therefore, it is unclear to one having ordinary skill in the art as to what "maximum value*s*" (emphasis added) are being referred.

Claim 6 is similarly rejected as being vague and indefinite because it attempts to further limit claim 3 to determine an average for "a sequence of said variance values" while parent claim 3 only determines "a variance value" for "a sequence of stored packets". Therefore, it is unclear to one having ordinary skill in the art as to what "variance value*s*" (emphasis added) are being referred.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, because in includes a limitation for "determining an average for a sequence of said maximum values" while there is no previous mention of any "maximum values". Therefore, it is unclear to one having ordinary skill in the art as to what "said maximum values" refers.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite because it recites "[a] computer readable medium carrying a computer program for implementing the method according to claim 1" while claim 1 recites a "method of

assessing speech quality transmitted via a packet based telecommunications network...". Therefore, claim 7 is considered to be ambiguous because attempts to further limit a method with an apparatus, thereby incorporating both product and process subject matter.

Claim 8 is similarly rejected under 35 U.S.C. 112, second paragraph, as being indefinite for attempting to further limit a "method of assessing speech quality transmitted via a packet based telecommunications network..." with "[a] computer program", thereby ambiguous for incorporating both product and process subject matter.

Claim 9 is considered to be vague and indefinite because in claim 9, lines 16-17, reference is made to "means for generating a jitter parameter for each of a sequence of stored packets". Claim 9, however, already presents "means for capturing and storing a sequence of intercepted packets associated with a call...means for extracting a set of parameters from said sequence of packets". Therefore, it is unclear to one having ordinary skill in the art as to whether the "means for generating a jitter parameter for each of a sequence of stored packets" refers to the previously presented "sequence of intercepted packets associated with a call" or a different sequence of stored packets. Also, since the previous limitation of "means for capturing and storing a sequence of intercepted packets associated with a call" only stores one sequence of packets, it unclear whether the "means for generating a jitter parameter for each of a sequence of stored packets" is generating a jitter

parameter for each of a sequence of stored packets, as claimed, or generating a

jitter parameter for each packet of a sequence of stored packets.

Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, because

they incorporate the lack or clarity present in their respective parent claims.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

9. Claims 7 and 8 are rejected under 35 U.S.C. 101 because the claimed invention

is directed to non-statutory subject matter.

Claim 7 is rejected under 35 U.S.C. 101, as being directed to non-statutory

subject matter, because it recites "[a] computer readable medium carrying a

computer program for implementing the method according to claim 1" while claim 1

recites a "method of assessing speech quality transmitted via a packet based

telecommunications network...". Therefore, claim 7 is rejected under 35 U.S.C. 101

since the claims are directed to neither a "process" nor a "machine" but rather

embrace or overlap two different statutory classes of inventions set forth in 35

U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the

alternative only.

Claim 8 is similarly rejected under 35 U.S.C. 101, as being directed to non-

statutory subject matter for attempting to further limit a "method of assessing speech

quality transmitted via a packet based telecommunications network..." with "[a]

computer program", thereby providing a claim directed to neither a "process" nor a

"machine" but rather embracing or overlapping two different statutory classes of

inventions set forth in 35 U.S.C. 101.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1, 2, and 7-9, as may best be understood, are rejected under 35 U.S.C.

103(a) as being unpatentable over Cisco Systems, "Evaluate Network Performance

with Cisco IOS® Service Assurance Agent" (Hereafter "Cisco") in view of U.S. Patent

Application Publication No. 2003/0086425 to Bearden et al.

With respect to claim 1, Cisco discloses a method of assessing speech quality

transmitted via a packet based telecommunications network (i.e. voice over IP)

(page 66) comprising the steps of storing a sequence of intercepted packets

associated with a call (i.e. VoIP call) (page 70), each packet containing speech data

(i.e. voice) (pages 8 and 66), and an indication of a transmission time of said packet

(i.e. STx) (page 65); storing with each intercepted packet an indication of an

intercept time of said packet (i.e. RTx) (page 65); extracting a set of parameters from

said sequence of packets wherein the extracting step comprises the sub steps of

generating a jitter parameter (i.e. JitterSD) for each of a sequence of stored packets

in dependence upon the difference between the transmission time of a stored packet

(i.e. ST2) and the transmission time of a preceding stored packet of the sequence

(i.e. ST1); and the difference between the intercept time of said stored packet (i.e.

RT2) and the intercept time of said preceding packet (RT1) (page 65); and

generating a consecutive positive jitter parameter (i.e. SumOfPositivesSD) for said

stored packet in dependence upon the polarity of said jitter parameter for said stored

packet and the polarity of said jitter parameter for any preceding stored packets

(pages 66 and 72).

With respect to claim 2, Cisco discloses determining a maximum value of said

consecutive jitter parameter for a sequence of stored packets (i.e.

MaxOfPositivesSD) (page 73).

With respect to claims 7 and 8, Cisco discloses implementing the method as a

object-oriented logic language probe in accordance with a process agent deployed

and run on customer presence equipment (i.e. CPE) (pages 165-172) including a

computer readable medium (i.e. memory) carrying the instructions to carry out the

method when executed by a CPU (pages 143-144 and 154).

With respect to claim 9, Cisco discloses an apparatus for assessing speech

quality transmitted via a packet based telecommunications network (i.e. voice over

IP) (page 66) comprising means, such as an object-oriented logic language probe in

accordance with a process agent deployed and run on customer presence

equipment (i.e. CPE) (pages 165-172) including a computer readable medium (i.e.

memory) carrying the instructions to carry out the method when executed by a CPU

(pages 143-144 and 154), for capturing (i.e. sample and collect) (page 18) and

storing a sequence of intercepted packets associated with a call (i.e. VoIP call)

(page 70), each packet containing speech data (i.e. voice) (pages 8 and 66), and an

indication of a transmission time of said packet (i.e. STx) (page 65); means for

storing with each intercepted packet an indication of an intercept time of said packet

(i.e. RTx) (page 65); means for extracting a set of parameters from said sequence of

packets wherein the means for extracting comprises means for generating a jitter

parameter (i.e. JitterSD) for each of a sequence of stored packets in dependence

upon the difference between the transmission time of a stored packet (i.e. ST2) and

the transmission time of a preceding stored packet of the sequence (i.e. ST1); and

the difference between the intercept time of said stored packet (i.e. RT2) and the

intercept time of said preceding packet (RT1) (page 65); and means for generating a

consecutive positive jitter parameter (i.e. SumOfPositivesSD) for said stored packet

in dependence upon the polarity of said jitter parameter for said stored packet and

the polarity of said jitter parameter for any preceding stored packets (pages 66 and

72).

As noted above, the invention of Cisco teaches many of the features of the

claimed invention and while the invention of Cisco does teach extracting a set of

jitter parameters to assess speech quality of a VoIP network, Cisco does not

explicitly include means for generating an estimated mean opinion score in

dependence upon said set of parameters.

Bearden teaches network traffic generation and monitoring systems and methods

for their use in testing frameworks for determining suitability of a network for target

applications, such as VoIP network applications (0006, lines 1-10), comprising

means for extracting a set of speech quality parameters, including jitter, and

generating an estimated mean opinion score in dependence upon the set of speech

quality parameters (0085, lines 1-13).

It would have been obvious to one having ordinary skill in the art to modify the

invention of Cisco to explicitly include means for generating an estimated mean

opinion score in dependence upon said set of parameters, as taught by Bearden,

because, as suggested by Bearden, the combination would have improved the

speech quality analysis of Cisco by employing a widely used, accepted, and

understood scale of speech quality (0085, lines 1-13) and reducing the burden of a

user to interpret the jitter results by instead providing the result in a clearly

understandable numerical index of quality (0238, lines 24-38).

12. Claim 3-6, as may best be understood, are rejected under 35 U.S.C. 103(a) as

being unpatentable over Cisco in view of Bearden et al. and further in view of U.S.

Patent Application Publication No. 2003/0018450 to Carley.

As noted above, the invention of Cisco and Bearden teaches many of the

features of the claimed invention and while the invention of Cisco and Bearden does

teach extracting a set of parameters from a sequence of packets including a jitter

parameter, consecutive positive jitter parameter, and maximum value of the

consecutive jitter parameter, the combination does not specifically include determining a variance value of the measured parameter and a subsequent average of the maximum and/or variance value.

Carley teaches a system and method for providing composite variance analysis for network operation of a packet based network (0002, lines 1-9 and 0017, line 1 to 0024, line 3) comprising means for extracting and storing a jitter parameter performance metric for a sequence of packets (0041, lines 1-23) determining a variance statistic for the performance metric and determining a subsequent standard deviation of the determined variance statistic (0047, line 4 to 0048, line 7), wherein the variance statistic includes a maximum value and standard deviation of the performance metric (0068, lines 11-19). Therefore, Carley teaches determining both a maximum of the performance metric followed by a standard deviation of the maximum as well as a standard deviation of the performance metric followed by a subsequent standard deviation. It is further considered inherent that in order to determine each standard deviation, an average and variance must first be determined (see for example, Internet Glossary of Statistical Terms, "Variance" and "Standard Deviation").

It would have been obvious to one having ordinary skill in the art to modify the invention of Cisco and Bearden to include determining a variance value of the measured parameter and a subsequent average of the maximum and/or variance value, as taught by Carley, because the invention of Cisco and Bearden does teach a method for assessing the quality of speech packets but provides no significant

method for determining when a speech quality degrades below a desired level and

the invention of Carley suggests that the combination would have improved the

method of Cisco and Bearden by allowing the user to determine the quality with

greater detail by determining how the performance of a given network server is

performing with respect to any desired performance metric over time as well as

determine whether the performance of a network service at any particular time is

outside of acceptable limits (0040, lines 1-28).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to

Applicant's disclosure:

Internet Glossary of Statistical Terms, "Variance" and "Standard Deviation"

teaches the definitions for "Variance" and "Standard Deviation" as well as that in

order to calculate the variance, a mean/average must first be determined, as well as

that in order to calculate the standard deviation, a variance must first be determined.

Rix, et al, "The perceptual analysis measurement system for robust end-to-end

speech quality assessment" teaches an objective model designed to evaluate the

perceived speech quality of voice over IP.

Rix et al, "Perceptual evaluation of speech quality (PESQ)-a new method for

speech quality assessment of telephone networks and codecs" teaches a new

model for speech quality assessment for use across a wider range of network

conditions including analog connections, packet loss and variable delay.

U.S. Patent Application Publication No. 2003/0072269 to Teruhi et al. teaches a data transmission control method, program therefore and data transmission unit for determining packet quality.

U.S. Patent Application Publication No. 2002/0141392 to Tezuka et al. teaches a gateway apparatus and voice data transmission method.

U.S. Patent Application Publication No. 2002/0051464 to Sin et al. teaches a method for monitoring the quality of transmission across packet-based networks.

U.S. Patent No. 6,928,473 to Sundaram et al. teaches a method for measuring network jitter on application packet flows.

U.S. Patent No. 6,363,429 to Ketcham teaches a method and system for automatic determination of priority data streams on computer networks.
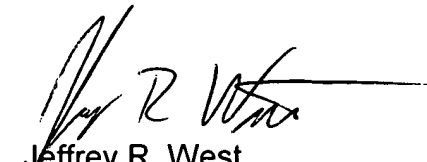
U.S. Patent No. 6,327,274 to Ravikanth teaches a method for estimating relative skew between clocks in packet networks.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

only. For more information about the PAIR system, see http://pair-direct.uspto.gov.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey R. West
Examiner – AU 2857

December 11, 2005